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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,062	10/23/2003	Christopher L. Rumer	P16914	4105
28062	7590	06/30/2005	EXAMINER	
BUCKLEY, MASCHOFF, TALWALKAR LLC			CLARK, SHEILA V	
5 ELM STREET			ART UNIT	
NEW CANAAN, CT 06840			PAPER NUMBER	
			2815	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/692,062	RUMER ET AL	
	Examiner	Art Unit	
	S. V. Clark	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 1-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-41 and 47-56 is/are rejected.
- 7) ☒ Claim(s) 42-46, 57 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 37-41, 47-54, 55, 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukagoshi et al.

Tsukagoshi et al shown a substrate 4 having a plurality of electrodes 5 and a die 1 having a plurality of projecting electrodes 2 and an underfill 11 formed of electrically conductive filler particles 12. As both the electrodes 2 and 5 of Tsukagoshi are both characteristic of bumps it would have been obvious to one having ordinary skill in this art to form them as bumps as shown and bumps are typically formed of solder.

Tsukagoshi et al teaches the particle volume recited in the claims in col. 6, lines 65-67 and also the use of non conductive particles in col. 8, line 51 used in the filler with said conductive particles.

Non conductive particle materials consisting of at least one of those recited in the claims are taught in col. 8, lines 49-54 and the conductive particles in col.7, line 42.-51.

Col.7, lines 30-39 teach forming the underfill of an epoxy resin and a curing or hardening agent. Anhydrides are used widely in underfill materials. It would have been therefore obvious to use such in the filler of Tsukagoshi et al and especially as Tsukagoshi et al suggests with the use of "etc" that many conventional material may be used.

Col. 7, line 50-51 teach coating conductive filler particles with a non conductive coating.


As the invention taught by is taught to be applicable to IC cards and wherein IC cards typically contain memory devices, it is therefore deemed that the teachings of Tsukagoshi et al are applicable to memory structures and therefore may obviously contain a chip set.

Claim 37-41, 47-55, 56 are rejected.

Claims 42-46 and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Hsieh, Schrock, Takkeichi et al and Jiang are cited to show underfill having filler particles.

Any inquiry concerning this communication should be directed to S. V. Clark at telephone number (571) 272-1725.



S. V. Clark
Primary Examiner
Art Unit 2815

June 25, 2005